

Appl. No. 10/820,575
Office Action dated April 21, 2005
Amdt dated: August 18, 2006

REMARKS

Applicants appreciate the recognition of allowable subject matter in the present application.

Applicants hereby add new claims 65-74. Accordingly, claims 19-21, 49-52, and 59-74 are pending in the present application.

Claim 20 is objected to. Claims 19, 21, 49, 51-52, and 59-62 stand rejected under 35 USC 102(b) for anticipation by U.S. Patent No. 4,282,745 to Burr. Claims 20, 50 and 60 stand rejected under 35 USC 103(a) for obviousness over Burr in view of U.S. Patent No. 5,446,531 to Boyer et al.

Applicants respectfully traverse the rejections and urge allowance of the present application.

Referring to the objection to claim 20, Applicants respectfully submit the claim is correct as filed. More specifically, claim 20 specifically recites that the at least one sensor of claim 19 is to be construed to recite a plurality of sensors and accordingly further defines claim 20. Applicants submit there is no confusion since a plurality of sensors are specifically claimed. Further, in accordance with Applicants authority to be their own lexicographer and define the invention in the terms they so chose, Applicants respectfully request reconsideration of the objection. Applicants respectfully a telephone call to the undersigned if the Examiner remains of the opinion that the objection to claim 20 is appropriate.

Referring to the anticipation rejections, Applicants note the requirements of MPEP

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§2131 (8th ed., rev. 2), which states that TO ANTICIPATE A CLAIM, THE REFERENCE MUST TEACH EVERY ELEMENT OF THE CLAIM. The **identical invention** must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements **must be arranged as required by the claim**. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Referring to independent claim 19, the Office relies upon the teachings of sensor 18 of Burr as allegedly disclosing the sensor recited in claim 19. Applicants respectfully disagree and submit claim 19 is in condition for allowance.

More specifically, claim 19 positively recites the *sensor monitors **turbidity** of subject material*. Applicants have electronically searched Burr and **have failed to uncover any teachings of turbidity or the claimed sensor monitoring turbidity**. The Office refers to the Abstract on page 3 of the Action in support of the rejection. However, the abstract of Burr merely discloses *monitoring or determination of the **proportion of particles of less than a predetermined size** in a fluid suspension*. Referring to the Background in col. 1, lines 30+ of Burr, it is clear Burr is concerned with **comparing particle size distributions of material having similar shape**. At col. 3, lines 35+, Burr clearly provides embodiments designed to measure a *percentage by weight of particles having **equivalent spherical diameters less than one or more predetermined values** in a specified range* in a number of suspensions. Accordingly, Burr is disclosed as being directed to determination of a proportion of particles less than a predetermined size, comparing particle size distributions

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of material having similar shape and measuring percentage by weight of particles have diameters below specific value(s). To the contrary, claim 19 recites *monitoring turbidity of the subject material*. Applicants respectfully submit that particles of larger diameter or size than a desired range are of no concern to Burr and are not monitored precluding an ability to monitor turbidity (i.e., such particles of increased size outside of the desired range of Burr impact turbidity of the samples of Burr). Burr is not interested in monitoring all particles in the samples since Burr is not concerned with monitoring turbidity but is concerned with monitoring proportion of particles of less than a predetermined size. The failure to monitor all particles in the sample precludes the system of Burr from providing information regarding turbidity since particles above a certain size are not monitored and no information is provided regarding such particles but such particles impact turbidity. Particles of increased size impact turbidity of the sample, are not monitored by Burr and accordingly Burr is void of teaching or suggesting monitoring turbidity of a sample as claimed.

Positively-recited limitations of claim 19 are not disclosed nor suggested by the prior art and claim 19 is allowable for at least this reason.

Applicants have identified herein claimed limitations which are not disclosed nor suggested by the teachings of the prior art identified by the Office. In the event that a rejection of the claims is maintained with respect to the prior art, or a new rejection made, Applicants respectfully request identification *in a non-final action* of elements which allegedly correspond to limitations of the claims in accordance with 37 C.F.R §1.104(c)(2).

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In particular, 37 C.F.R §1.104(c)(2) provides that *the pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified*. Further, 37 C.F.R. §1.104(c)(2) states that the Examiner must cite the best references at their command. *When a reference is complex or shows or describes inventions other than that claimed by Applicants, the particular teachings relied upon must be designated as nearly as practicable*. Applicants respectfully request clarification of the rejections with respect to specific references and specific reference teachings therein pursuant to 37 C.F.R. §1.104(c)(2) in a *non-final* Action if claim 19 is not found to be allowable.

The claims which depend from independent claim 19 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features which are neither shown nor suggested by the cited art.

For example, referring to the 103 rejection of claim 20, Applicant respectfully submits to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See, e.g., MPEP §2143 (8th ed., rev. 2).

The Office on page 4 of the Action alleges that the combination of the teachings of Boyer with the teachings of Burr is appropriate "in order to improve the accuracy in the measurement of turbidity of a subject material." Applicants respectfully submit the alleged

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motivation is contrary to the teachings of the art, insufficient to establish a proper 103 rejection and claim 20 is allowable for this additional reason.

Initially, Burr is void of any teachings regarding turbidity or monitoring of turbidity. Accordingly, *it is nonsensical for one not concerned with turbidity or monitoring of turbidity (i.e., Burr) to look to a reference for improvements with respect to turbidity monitoring.* The teachings of Boyer are irrelevant to the invention of Burr, there is no motivation to combine the teachings, and the Office has failed to present a prima facie rejection of claim 20 for at least this reason.

In addition, the Federal Circuit discussed proper motivation *In re Lee*, 61 USPQ 2d 1430 (Fed. Cir. 2002). The motivation identified in the Office Action is akin to the conclusory statements set forth in *In re Lee* which were found to fail to provide the requisite motivation to support an obviousness rejection. The Court in *In re Lee* stated the factual inquiry whether to combine references must be thorough and searching. It must be based on objective evidence of record. The Court in *In re Fritch*, 23 USPQ 2d 1780, 1783 (Fed. Cir. 1992) stated motivation is provided only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. The *Lee* Court stated that the Examiner's conclusory statements in the *Lee* case do not adequately address the issue of motivation to combine. The Court additionally stated that the factual question of motivation is material to patentability and can not be resolved on subjective belief and unknown authority. The Court also stated that deficiencies of cited references

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cannot be remedied by general conclusions about what is basic knowledge or common sense. The Court further stated that the determination of patentability must be based on evidence.

In the instant case, **the record is entirely devoid of any evidence to support motivation to combine the teachings apart from the bald conclusory statements of the Examiner which are insufficient for proper motivation** as set forth by the Federal Circuit. The Office cannot rely on conclusory statements when dealing with particular combinations of prior art and specific claims but must set forth objective rationale on which it relied.

The only record presented by the Office is the *conclusory subjective opinions of the Examiner which are not supported by the prior art teachings*. As set forth by the Federal Circuit, the motivational rationale must be based upon **objective evidence of record**. There is no evidence of record to combine the reference teachings and the 103 rejection is improper for this additional reason. There is absolutely no evidence of record that the operations of the system of Burr would be improved by the combination proposed by the Office to motivate one to combine the reference teachings. There is no evidence of record that the system disclosed by Burr is inoperable for its disclosed purpose or that its operations would be improved by the teachings of Boyer. Indeed, Burr is not concerned with turbidity monitoring and accordingly there is no motivation to modify the teachings of Burr to provide improved turbidity measurement of increased accuracy as baldly alleged by the Office. The Office has failed to establish a prima facie 103 rejection for the above-

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compelling reasons and claim 20 is allowable.

In addition, Burr is not concerned with monitoring turbidity and if Burr were modified to monitor turbidity than the intended purpose of Burr to explicitly exclude monitoring of particles outside of a certain size range would be destroyed. *In re Fitch*, 972 F.2d 1260, 1265 n.12, 23 USPQ2d 1780, 1783 n.12 (Fed. Cir. 1992) (stating that a proposed modification is inappropriate for an obviousness inquiry when the modification renders the prior art inoperable for its intended purpose). The 103 rejection is improper for this additional reason.

Furthermore, even if the references are combined, the combination fails to teach limitations of claim 20 and the Office has failed to establish a proper 103 rejection for this additional reason. In particular, col. 8 and Fig. 3 of Boyer relied upon by the Office fail to disclose or suggest the claimed sensors to *monitor the turbidity of the subject material at a plurality of desired vertical positions of the container*. Photodiodes 36, 40 receive light from the *same light source 34* provided to the same portion of the sample and photodiode 40 merely receives light scattered following emission. Accordingly, even if the references are combined, the combination fails to disclose or suggest the above-recited limitations of claim 20 and the Office has failed to establish an appropriate 103 rejection for at least this additional reason.

Referring to dependent claim 60, there is absolutely *no objective evidence of record* to support the conclusory statements of the Office combining the references set forth on pages 4-5 of the Action. There is no sufficient motivation to combine the reference

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teachings and claim 60 is allowable.

Referring to dependent claim 63, no rejection has been presented with respect to claim 63. Nonetheless, there is no motivation to combine Burr and Boyer and claim 63 is believed to be in condition for allowance.

Furthermore, even if the references are combined, the combination fails to disclose or suggest limitations of claim 63. More specifically, Burr is concerned with particle size determination devices and Boyer is directed towards machines for washing articles. Even if the references are combined, the combination fails to disclose or suggest the positively claimed process chamber configured to receive and process a semiconductor workpiece using the subject material. The Office has failed to establish a proper 103 rejection for this additional reason.

If claim 63 is not allowed and in accordance with the above-noted portions of the CFR, Applicants respectfully request issuance of a non-Final Action so Applicants may appropriately respond during the prosecution of the present application.

Additionally, lacking a rejection of claim 63 and the lack of identification of prior art teachings relied upon in support of a rejection of claim 63, the pending Office Action clearly fails the regulatory mandate of 37 CFR 1.104(b) that "the examiner's action will be complete as to all matters." Moreover, MPEP §706.07 (8th ed., revision no. 2) states that "the examiner should never lose sight of the fact that in every case the applicant is entitled to a full and fair hearing, and that a clear issue between applicant and examiner should be developed, if possible, before appeal" (emphasis added). Without providing a non-final

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office action to provide Applicant with an opportunity to argue against subsequently identified rejection and reference teachings, Applicant would be denied a full and fair hearing and denied an opportunity to develop a clear issue with the Examiner. Accordingly, the rejection presented by the Office and the identification of reference teachings in Burr relied upon by the Office in a non-final office action is warranted and proper if claim 63 is not allowed.

Referring to the anticipation rejection of independent claim 49, Burr is *void of any teachings to turbidity or monitoring of turbidity of a subject material* as positively claimed in the method of claim 49. Additionally, Burr is void of any teachings of *generating a signal indicative of turbidity of the subject material* as further positively claimed in claim 49. Positively-recited limitations of claim 49 are not disclosed nor suggested by the prior art and claim 49 is allowable for at least this reason.

If claim 49 is not allowed, Applicants respectfully request the submission of a non-final Action to clarify the reference teachings relied upon as allegedly disclosing monitoring turbidity in accordance with the above-noted portions of the CFR so Applicants may appropriately respond during the prosecution of the present application.

The claims which depend from independent claim 49 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features which are neither shown nor suggested by the cited art.

The Office relies upon Official Notice in support of the rejection of claim 50. With respect to the rejection, Applicants submit claim 50 does not recite monitoring the "turbidity

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of the subject material at any predefined vertical position within the container" as alleged by the Office but recites in combination with the limitations of claim 49 *monitoring the turbidity of the subject material at a plurality of predefined vertical positions*. Furthermore, the undersigned hereby traverses and seasonably challenges any reliance upon Official Notice pursuant to MPEP §2144.03 (8th ed., rev. 2), and requests the Examiner cite a reference or affidavit in support of his or her position in a non-final Action if claim 50 is not allowed. MPEP 2144.03A (8th ed., rev. 2) provides that *official notice unsupported by documentary evidence should only be taken by the examiner when the facts asserted to be well known or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well known*. It is not appropriate for the Office to take office notice of facts without a reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known.

The Examiner is reminded that the facts constituting the state of the art are normally subject to the possibility of rationale disagreement among reasonable men and are not amenable to the taking of judicial notice. See *In re Eynde*, 480F.2d 1364, 1370, 178 USPQ 470, 474 (CCPA 1973). The Examiner is also reminded that claims are analyzed in the context of the combination of the various separately stated limitations, and not with respect to the limitations individually. Pursuant to MPEP §2144.03 (8th ed., rev. 2), Applicant hereby demands evidence with respect to what the Examiner apparently relies upon as being "well-known."

Applicants hereby add new claims 65-74 which are supported by Figs. 1-4 and 11

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and the associated teachings of the specification including page 9, lines 8+.

With respect to the non-initialed and non-considered references submitted by Applicants in the Information Disclosure Statement filed April 7, 2004, Applicants refer the Examiner to such Information Disclosure Statement whereupon it is stated:

The listed references were cited by, or submitted to, the Office in the parent, co-pending application of the above-identified application. The above-identified application is a divisional application of co-pending application Serial No. 09/521,092, filed March 7, 2000. Such prior disclosure is sufficient for the above-identified application as far as copies of the references are concerned. 37 C.F.R. § 1.98(d) and MPEP § 609(2).

Applicants respectfully request consideration of the prior art references in view of the above statement, the CFR and the MPEP and return of the initialed form PTO-1449 to Applicants. In addition, Applicants submit herewith a copy of an IDS and form PTO-1449 filed April 13, 2005 which includes references which have not be initialed. Applicants request return of the initialed form PTO-1449 to Applicants.

Applicants respectfully request allowance of all pending claims.

The Examiner is requested to phone the undersigned if the Examiner believes such would facilitate prosecution of the present application. The undersigned is available for telephone consultation at any time during normal business hours (Pacific Time Zone).


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Respectfully submitted,

Dated: 8/18/05

By: 
James D. Shaurette
Reg. No. 39,833

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Serial No. 10/820,575
Filing Date April 7, 2004
Inventor Scott E. Moore et al.
Assignee Micron Technology, Inc.
Group Art Unit 1734
Examiner Unknown
Attorney's Docket No. MI22-2493
Title: Semiconductor Workpiece Processing Methods and Turbidity Monitoring Methods

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

References – See Attached Form PTO-1449

The attached form PTO-1449 is submitted in compliance with 37 CFR §1.56. No admission is made regarding whether all the submitted references are prior art.

Respectfully submitted,

Dated: 4/12/05By: James D. Shaurette
Reg. No. 39,833

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|--|----|--|-----------|------------------------------------|-------|--------------------------|-------------------------------|
| Form PTO-1449 | | U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE | | ATTY. DOCKET NO. M22-2493 | | SERIAL NO. 10/820,575 | |
| LIST OF ART CITED BY APPLICANT (Use several sheets if necessary) | | | | APPLICANT Scott E. Moore et al. | | | |
| | | | | FILING DATE April 7, 2004 | | GROUP 1734 | |
| U.S. PATENT DOCUMENTS | | | | | | | |
| *Examiner Initial | | Document Number | Date | Name | Class | Subclass | Filing Date If Appropriate |
| | AA | 6,096,185 | 8/1/2000 | Corlett et al. | | | |
| | AB | 5,791,970 | 8/11/1998 | Yush | | | |
| | AC | | | | | | |
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| EXAMINER | | | | DATE CONSIDERED | | | |
| *EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citations if not in conformance and not considered. Include copy of this form with next communication to applicant. | | | | | | | |

Sheet 2 of 2

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| Form PTO-1449 | | U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE | | ATTY. DOCKET NO. M72-3493 | | PRIORITY SERIAL NO. 09521,092 | |
| LIST OF ART CITED BY APPLICANT (Use several sheets if necessary) | | | | APPLICANT Scott E. Moore et al. | | PRIORITY FILING DATE March 7, 2000 | |
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| U.S. PATENT DOCUMENTS | | | | | | | |
| Examiner Initial | Document Number | Date | Name | Class | Subclass | Filing Date if Appropriate | |
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| | AH | | | | | | |
| OTHER REFERENCES (including Author, Title, Date, Forfeited Pages, Etc.) | | | | | | | |
| | AJ | "The Science and Engineering of Microelectronic Fabrication"; Campbell, Stephen A.; Oxford University Press; 1996; pp. 233-257. | | | | | |
| | AJ | http://www.imec.com/technology/technology.htm, Ima Technology, Sensors, 03/23/99, 2 pages | | | | | |
| | AJ | http://www.felice.com/technology/technology.htm, Felice-SD, Turbidity Sensor, 03/23/99, 1 page | | | | | |
| | AK | http://www.customersupport.cisco.com/cisco.com, Cisco Systems, 6000-Series Process Photometric Analyzers, 03/23/99, 2 pages | | | | | |
| | AL | http://www.reflexionics.com/reflexionics_inc_contents.htm, Reflexionics, Inc., Fiber Optic Backscatter Sensor, 03/23/99, 1 page | | | | | |
| | AM | http://www.honeywell.com/technology/technology.htm, Honeywell, Turbidity Sensor, 03/23/99, 1 page | | | | | |
| | AT | http://www.honeywell.com/technology/technology.htm, Honeywell, Turbidity Sensor, 03/23/99, 1 page | | | | | |
| EXAMINER | | DATE CONSIDERED | | 04/14/05 | | | |
| *EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. | | | | | | | |

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